

Fig. 1

Superseded by
drawing
received
06.02.00

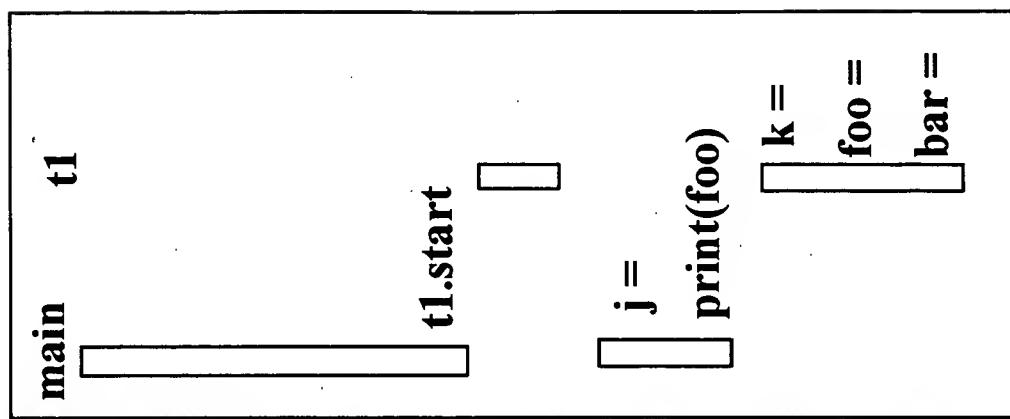


Fig. 2 (d)

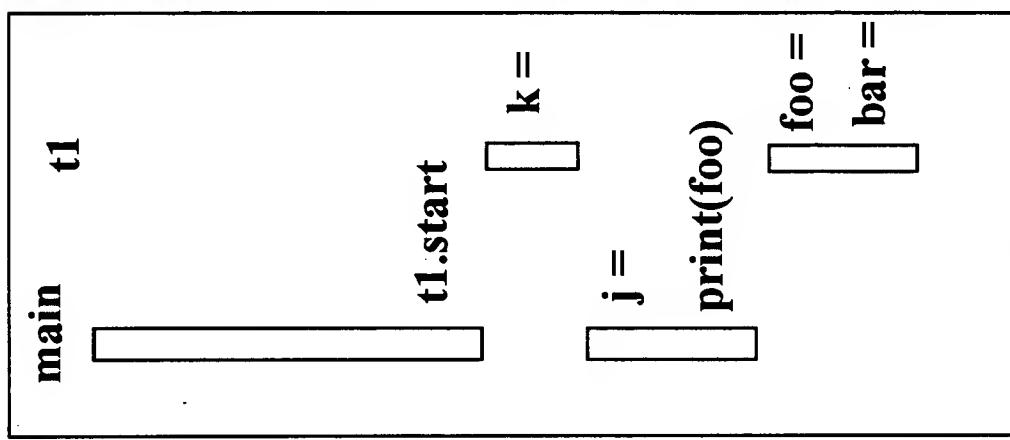


Fig. 2 (c)

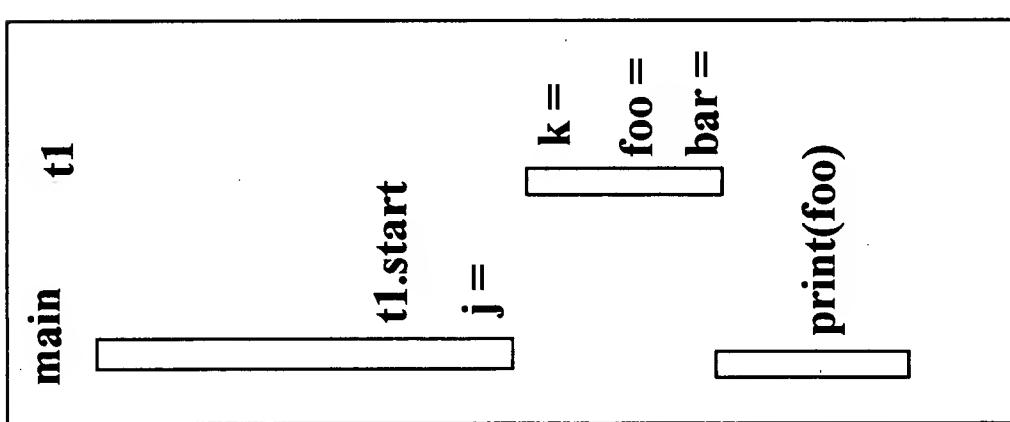


Fig. 2 (b)

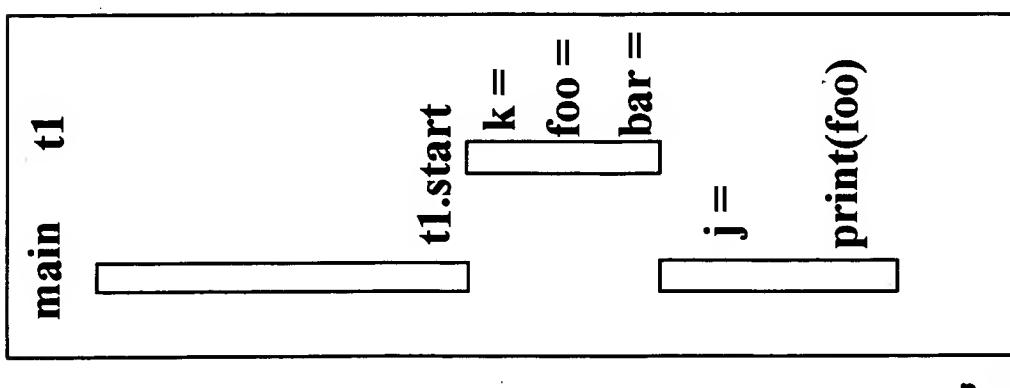


Fig. 2 (a)

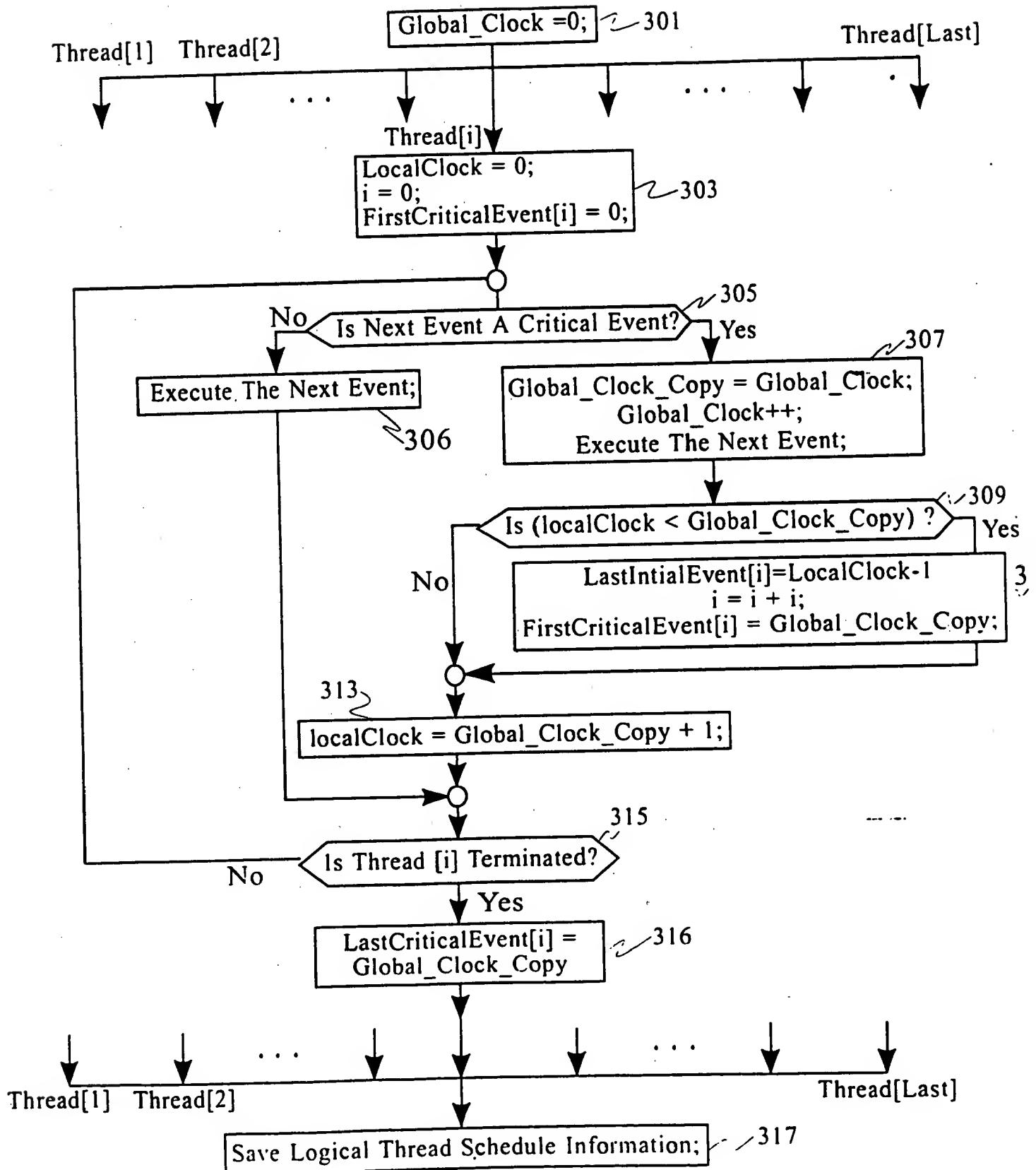


Fig. 3A

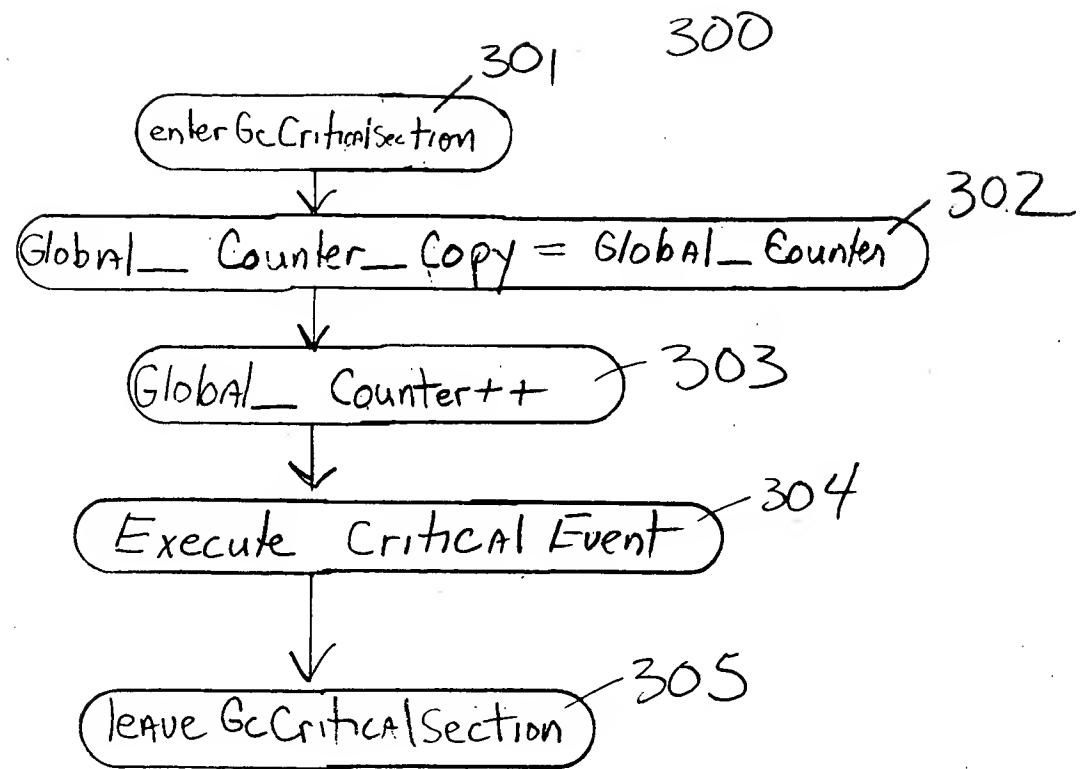
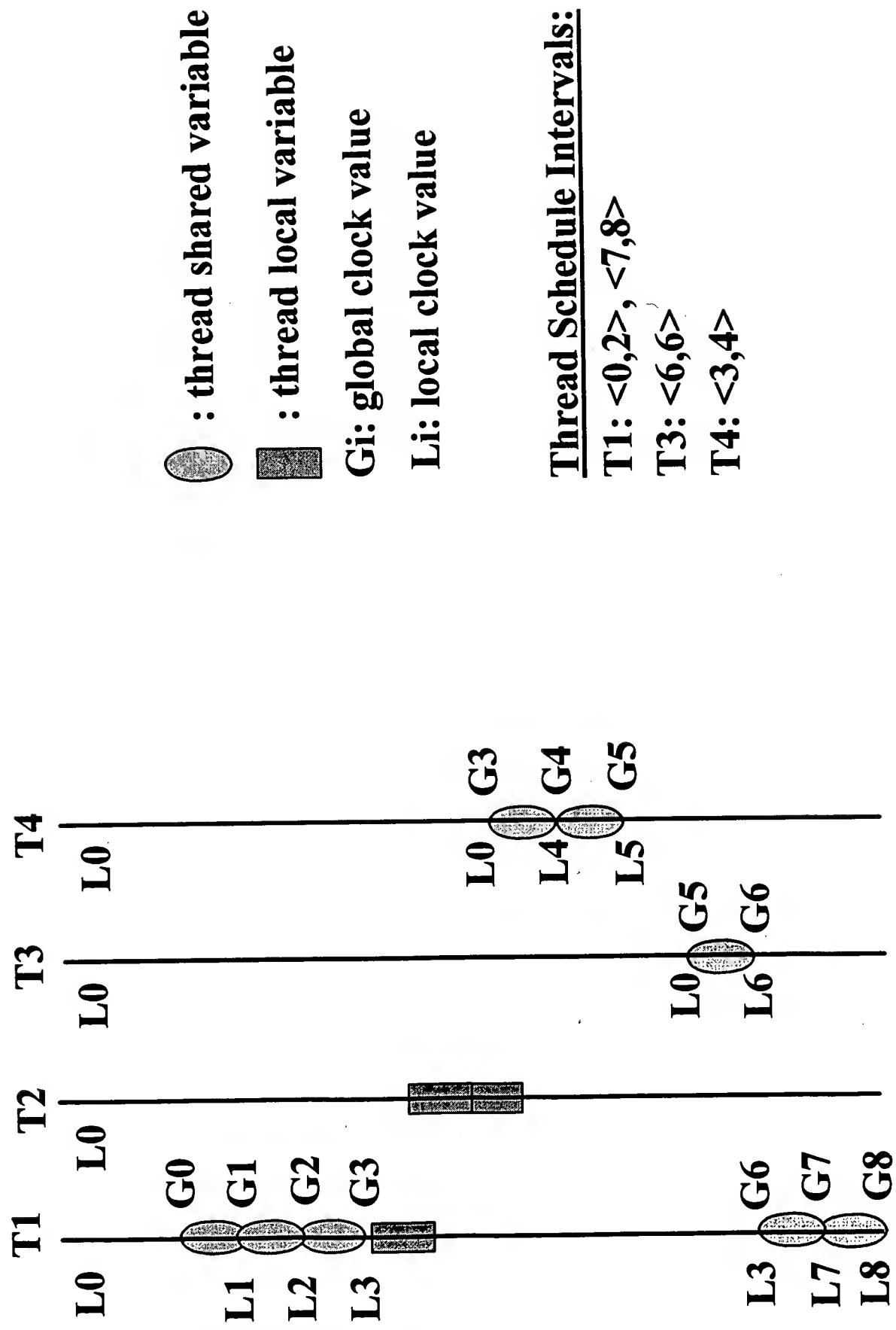
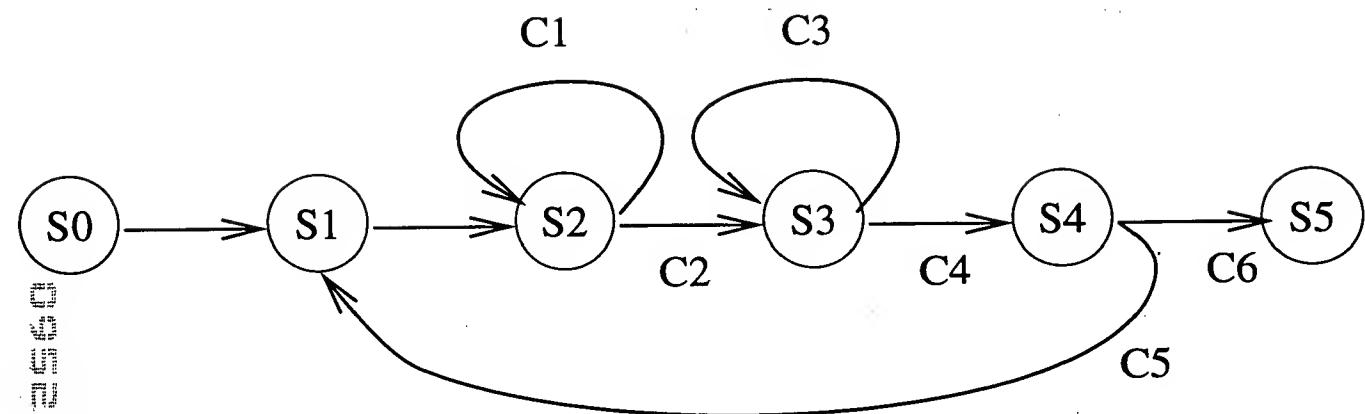


Fig. 3B

Figure 4





START, $i = 0$

update FirstCriticalEvent(i) and

LastCriticalEvent(i)

yield the thread schedule

execute event.

criticalEvent increment global_counter

$i = i + 1$

END

C1: global_counter < FirstCriticalEvent(i)

C2: not C1

C3: global_counter <= LastCriticalEvent(i)

C4: not C3

C5: $i \leq$ last interval

C6: not C5

FIG. 5

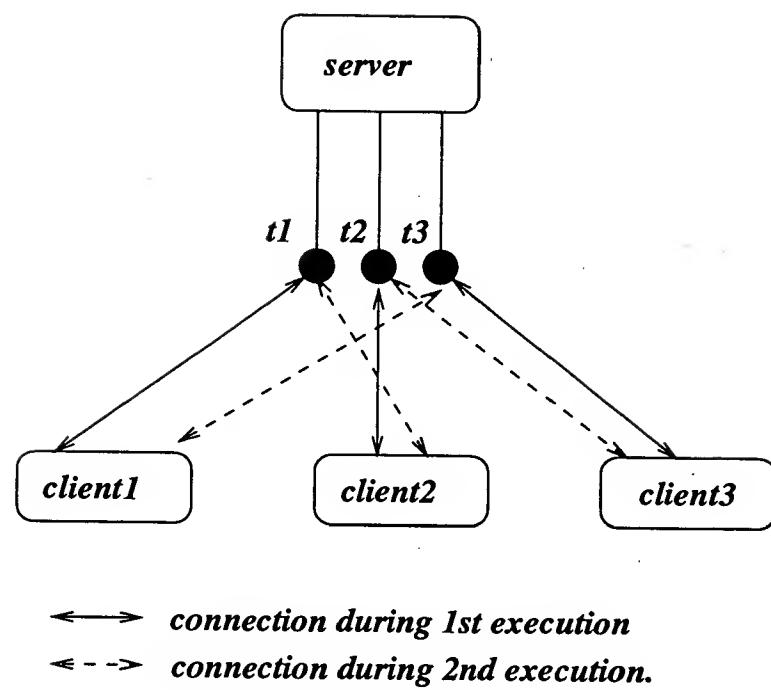
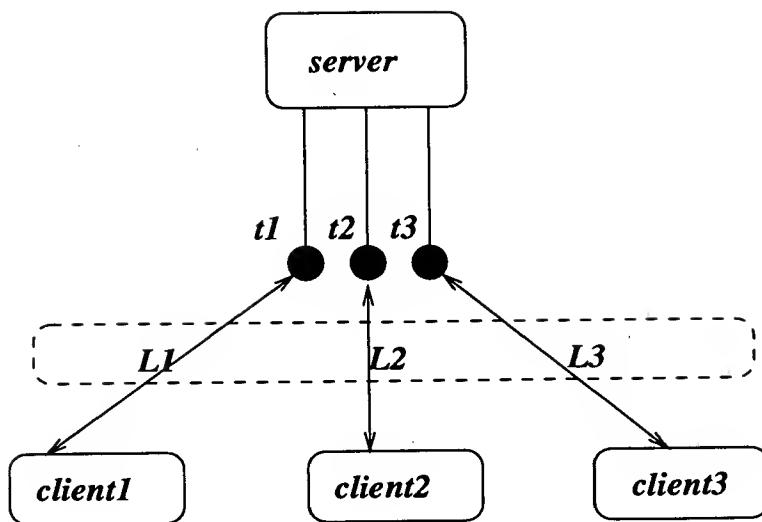


FIG. 6



$L1: <gS1, Client1Id>, Client1Id = <Client1VMID, gCounterClient1>$

$L2: <gS2, Client2Id>, Client2Id = <Client2VMID, gCounterClient2>$

$L3: <gS3, Client3Id>, Client3Id = <Client3VMID, gCounterClient3>$

FIG. 7

Figure 8(a): read in Record Mode

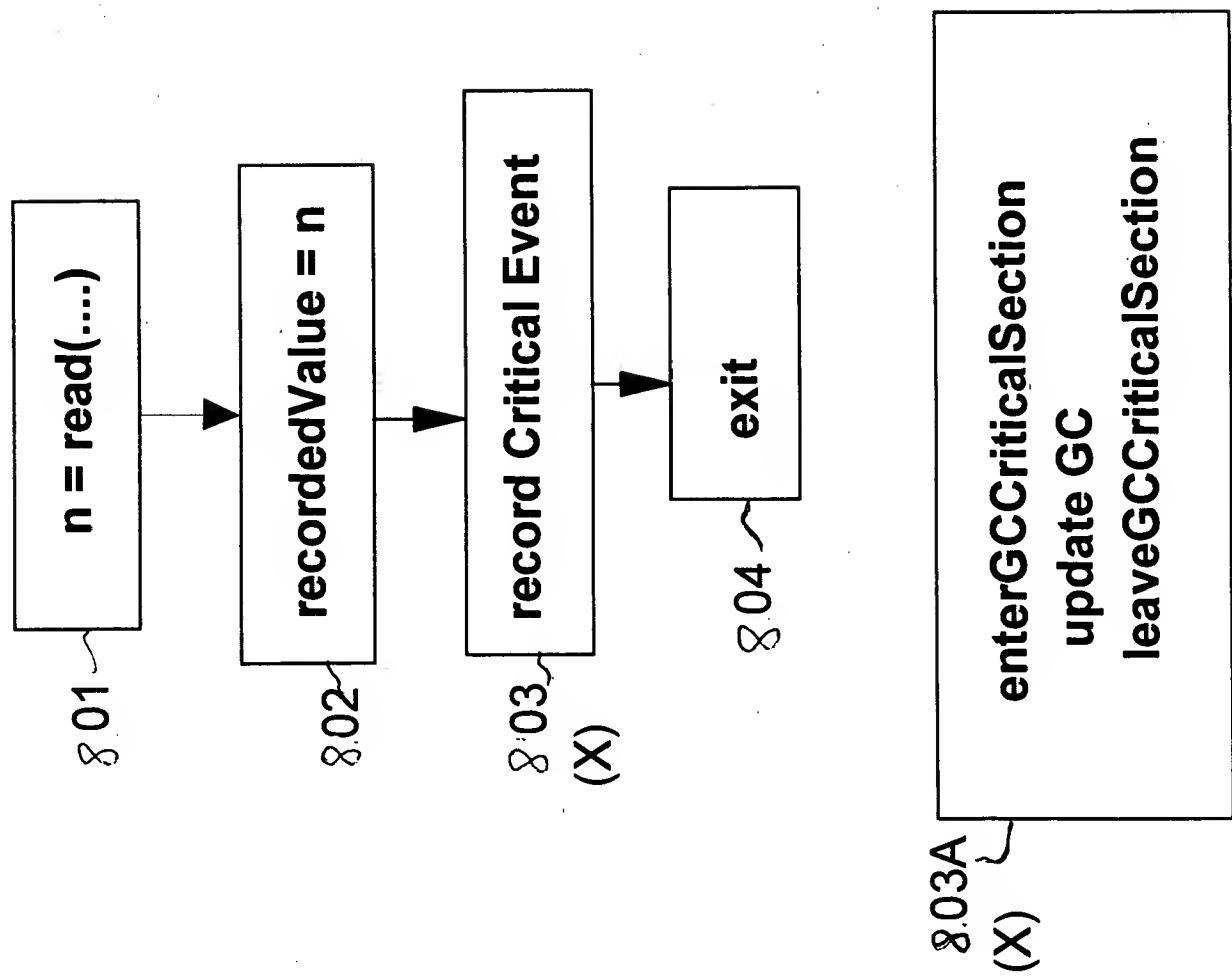


Figure 8(b): read in Replay Mode

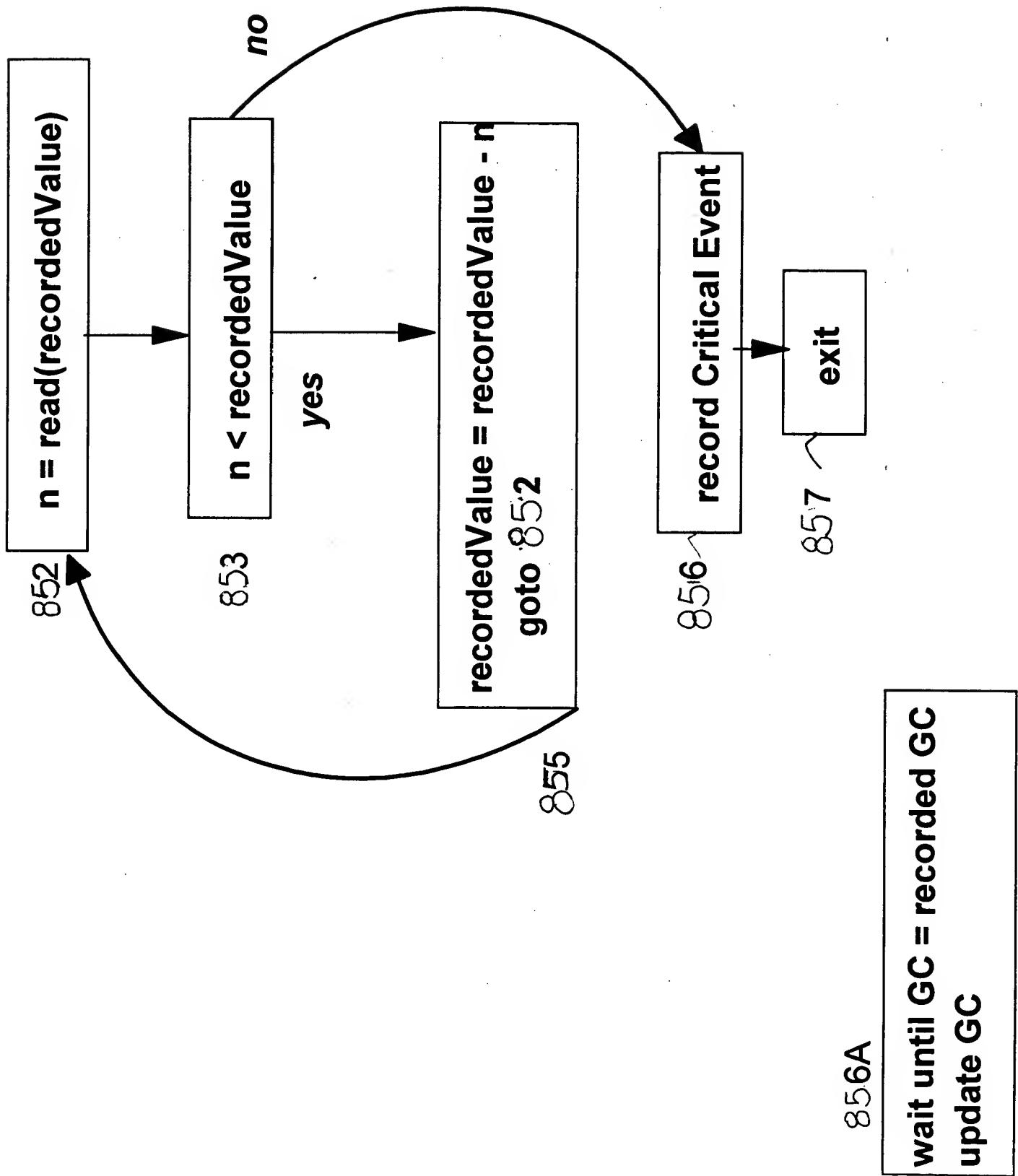


Figure 9 (a): write in Record Mode

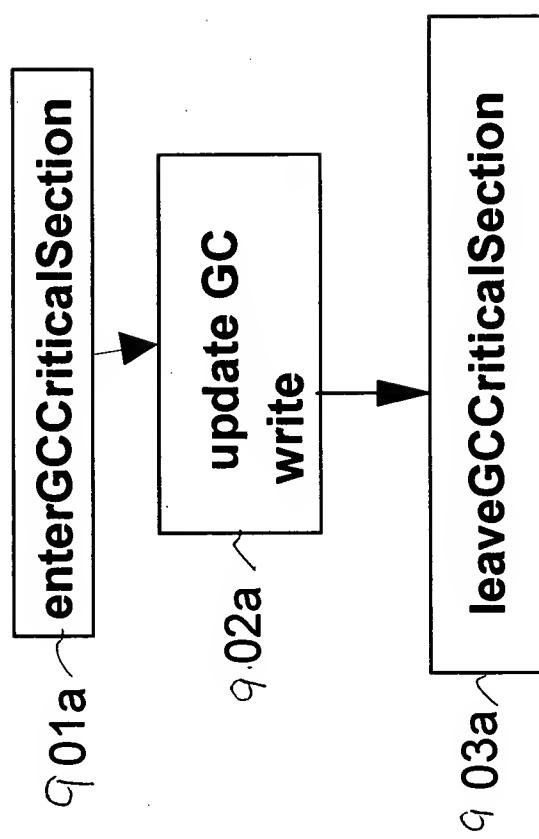


Figure 9 (b): write in Replay Mode

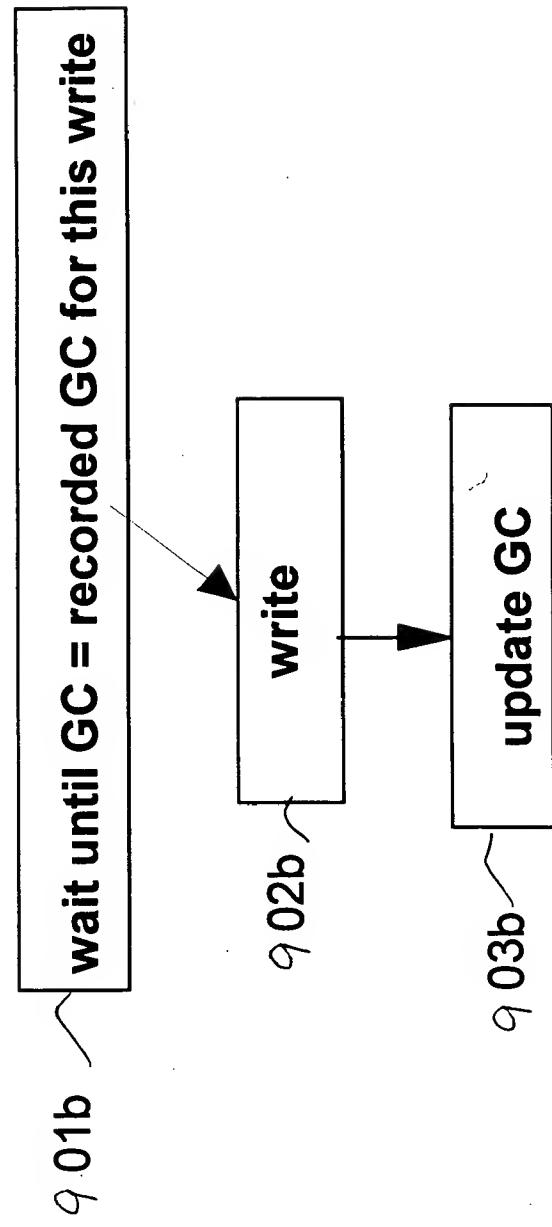


Figure 10: accept and connect in Record Mode

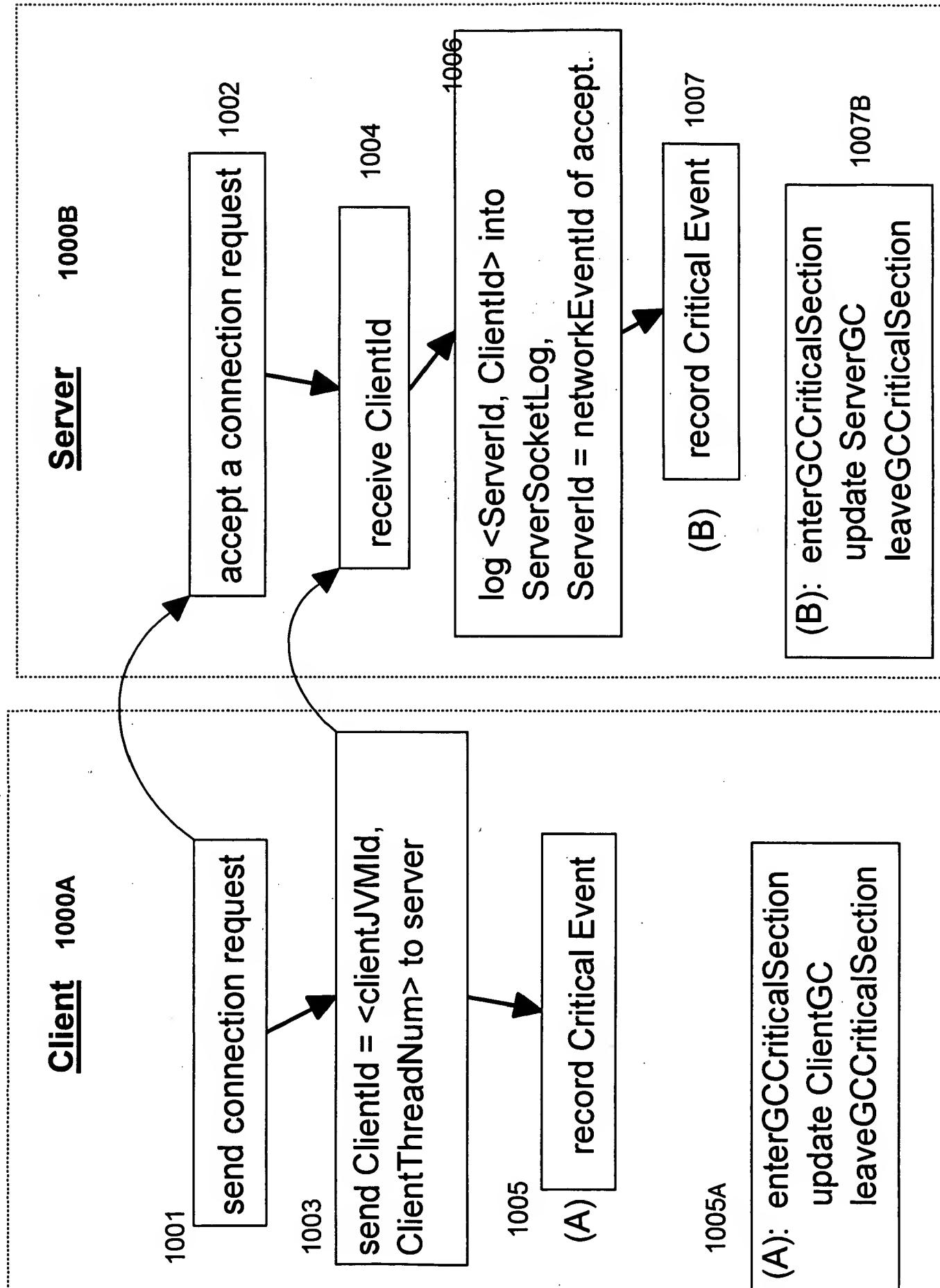


Figure 11: accept in Replay Mode

Serv r

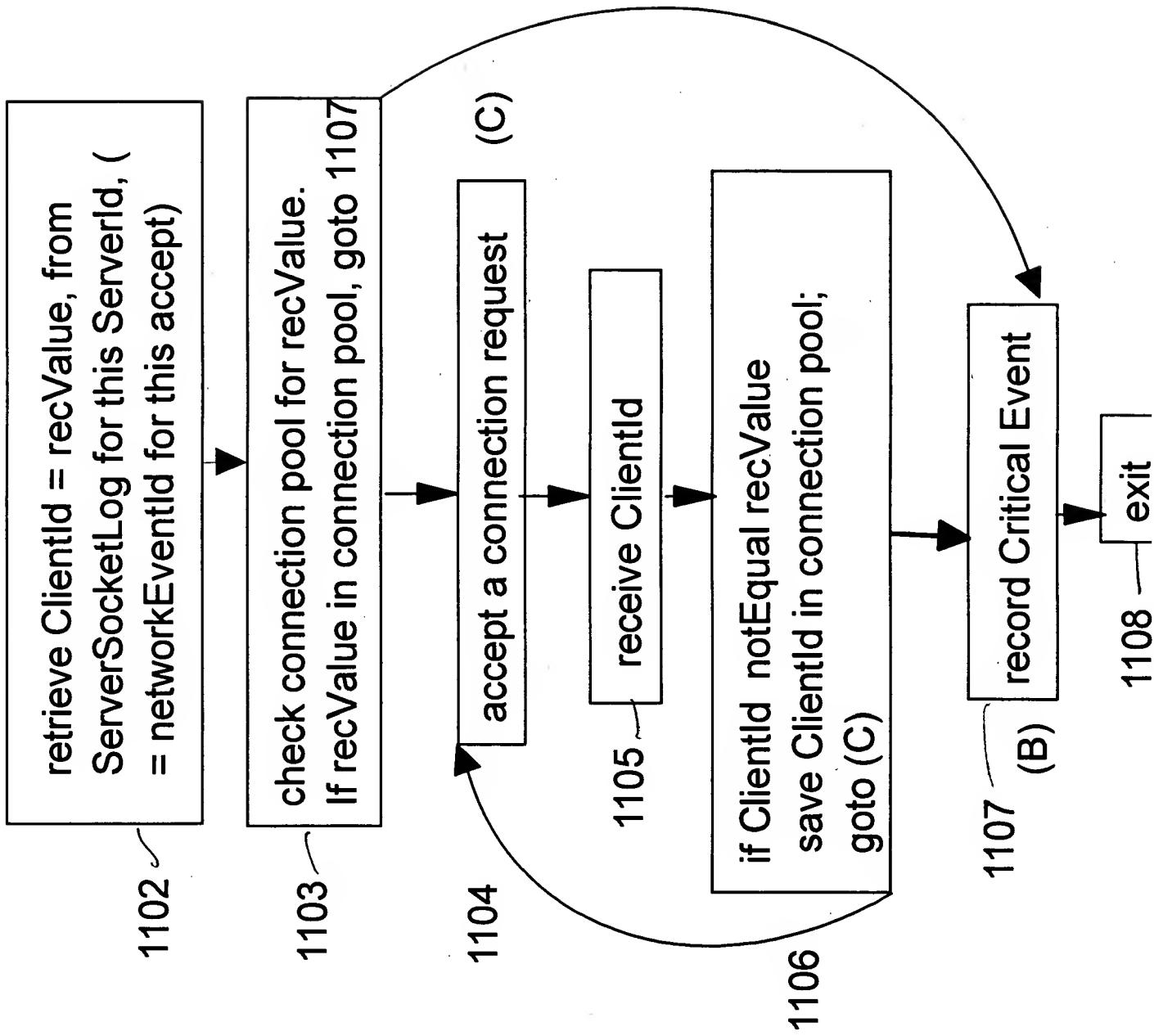


Figure 12(a): efficient replay of read

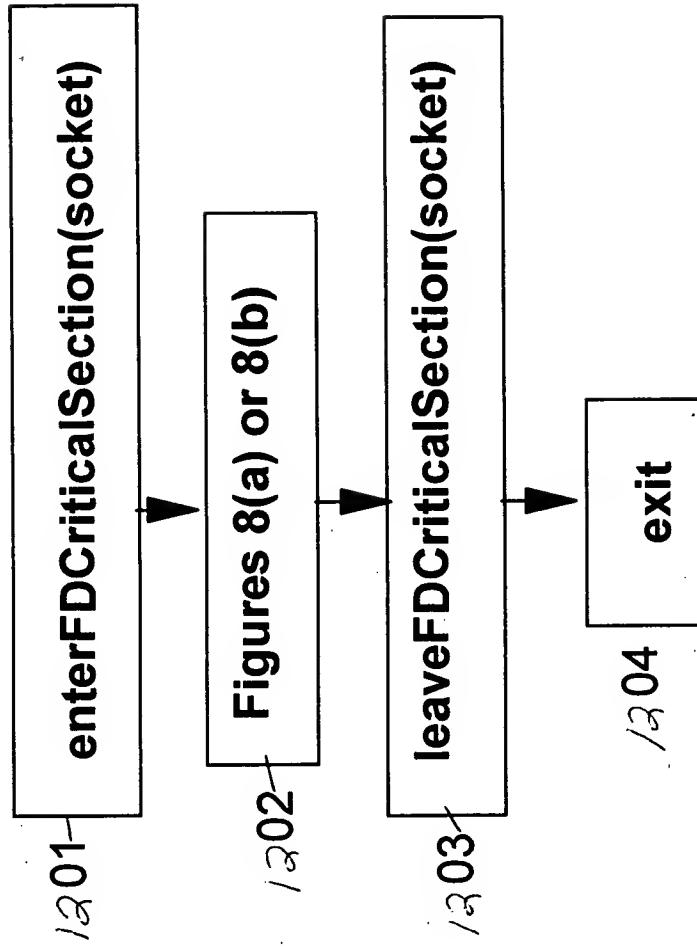


Figure 12(b): efficient replay of write

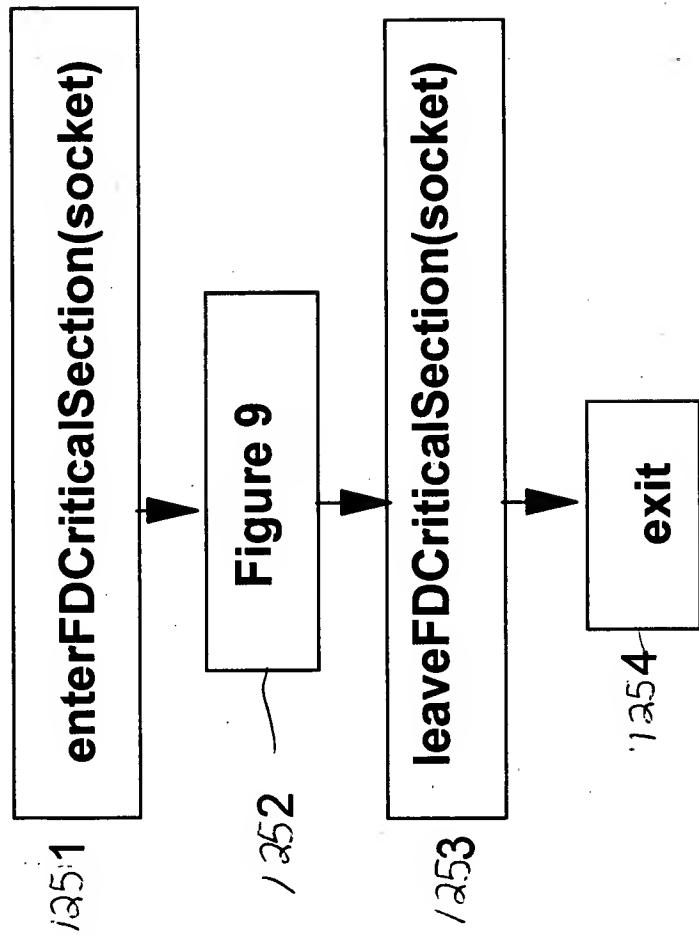


FIG 13.

